

Best Available Copy

FIG. 1

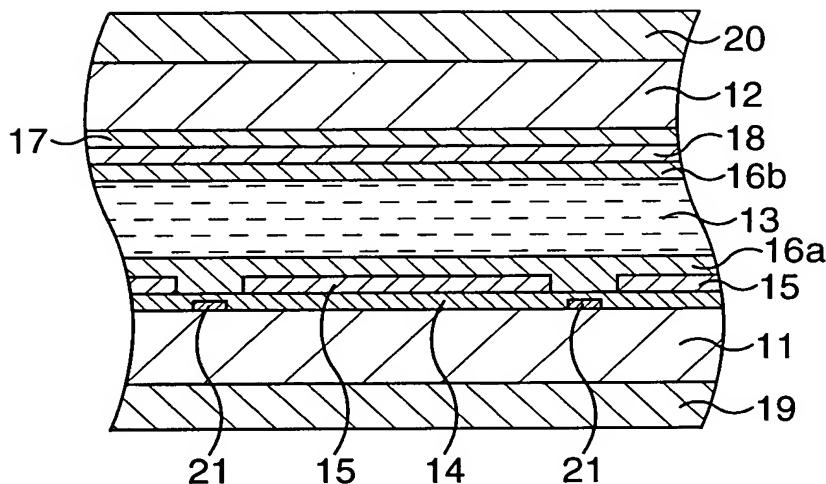


FIG. 2A

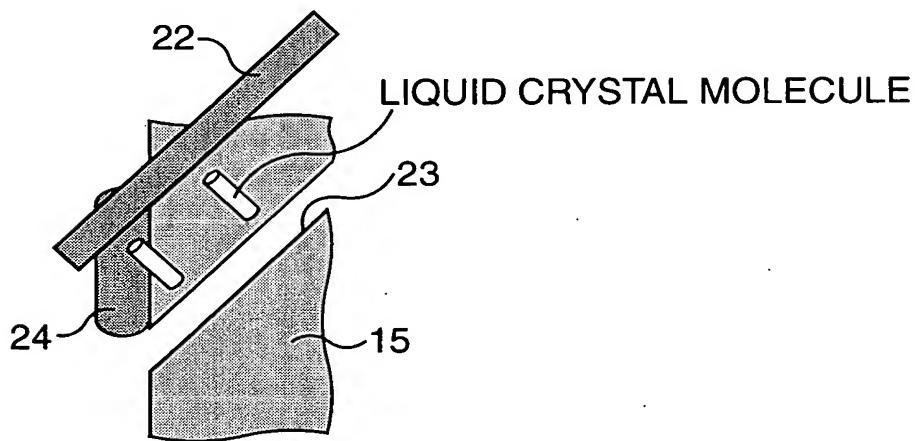


FIG. 2B

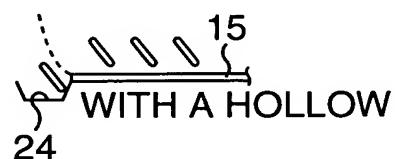


FIG. 2C



FIG. 3A

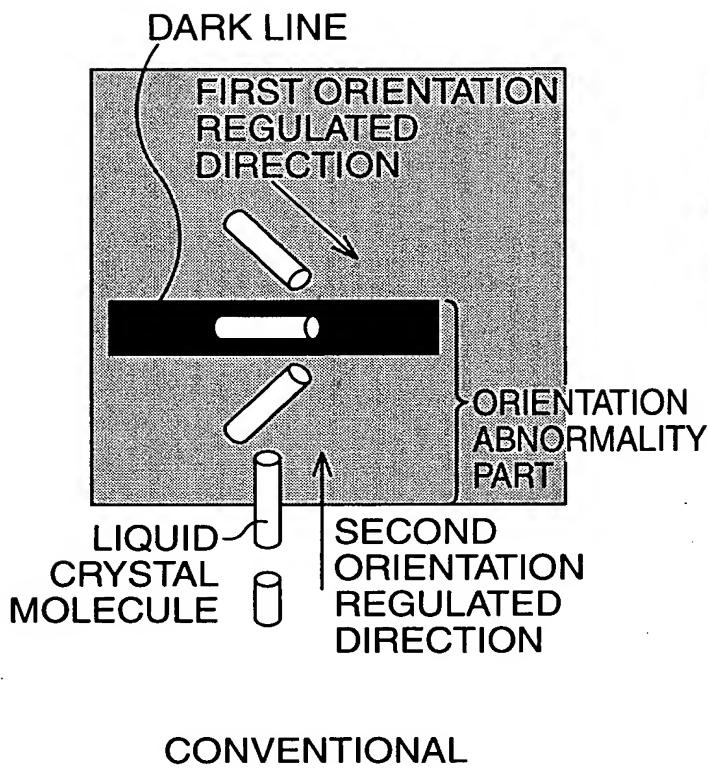


FIG. 3B

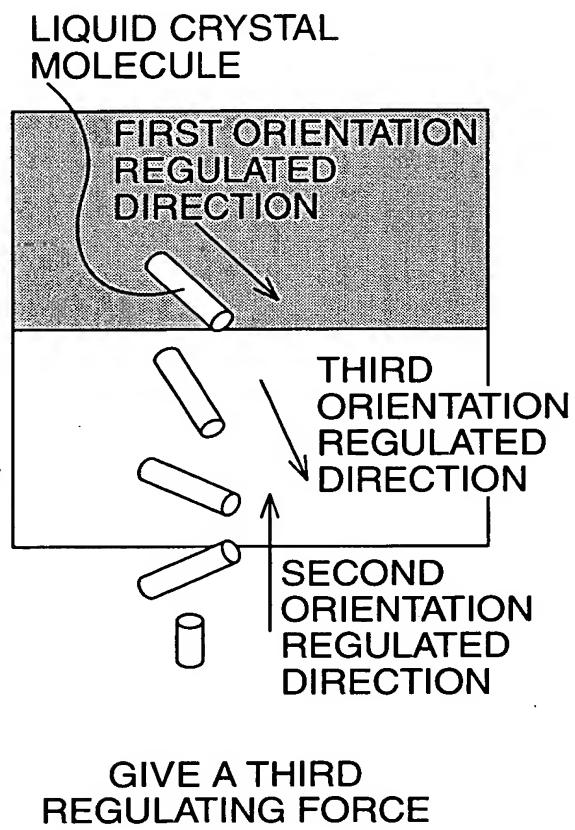
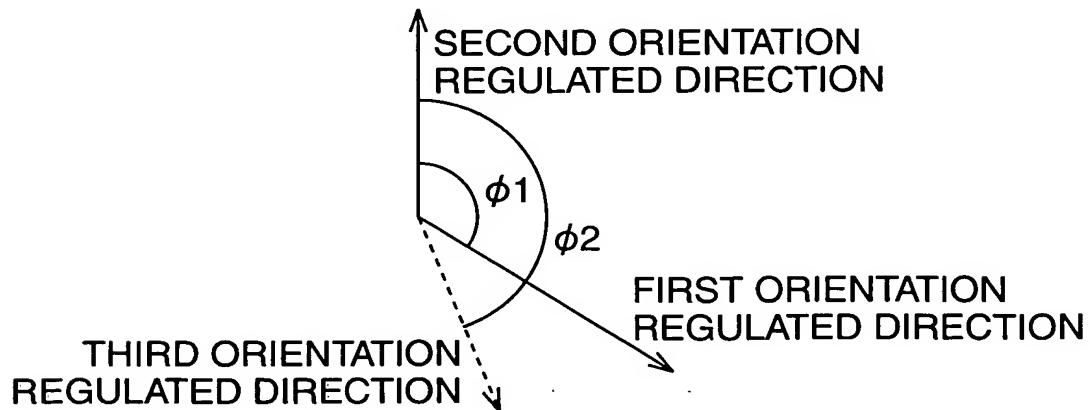
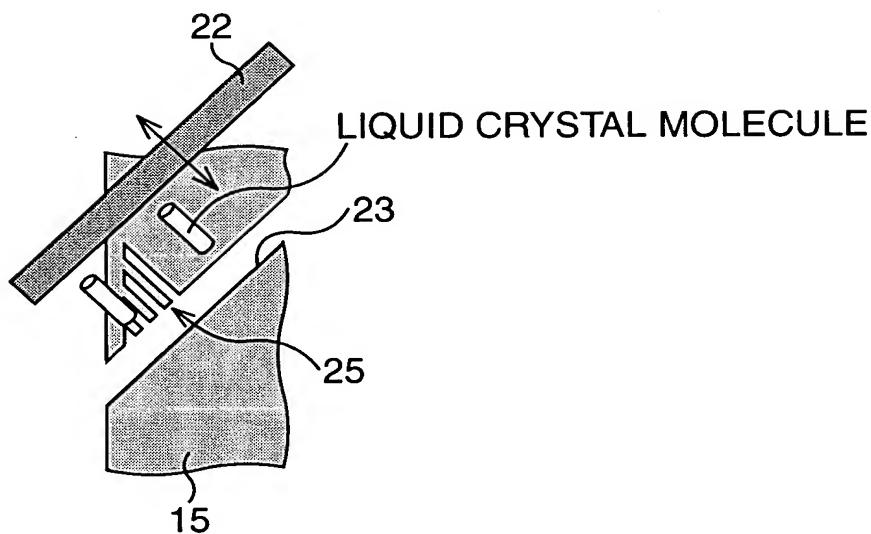


FIG. 3C



RELATION BETWEEN DIRECTIONS OF
ALIGNING FORCE AND ANGLES

FIG. 4



2019 FEB 22 2:10 PM '20

FIG. 5

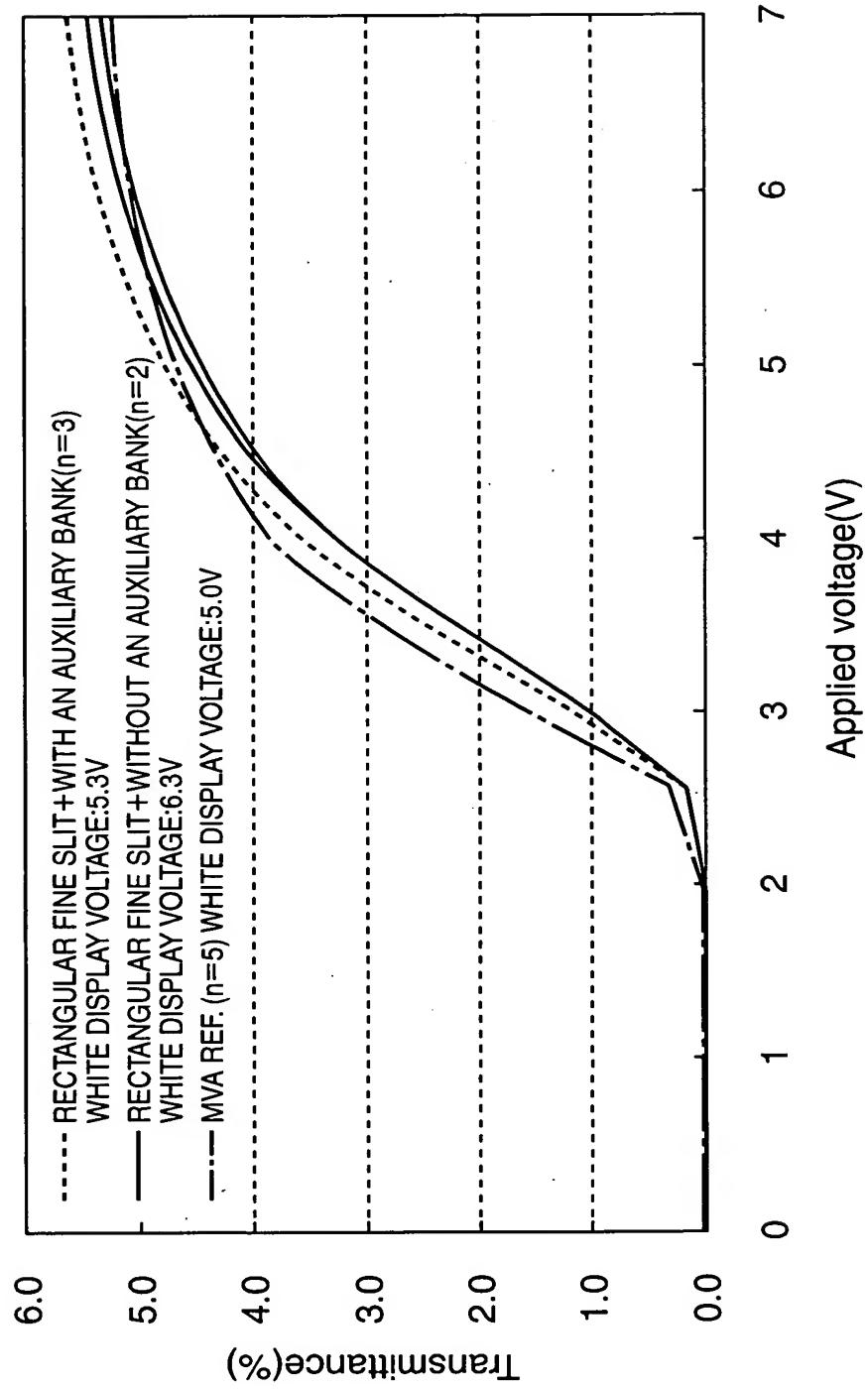
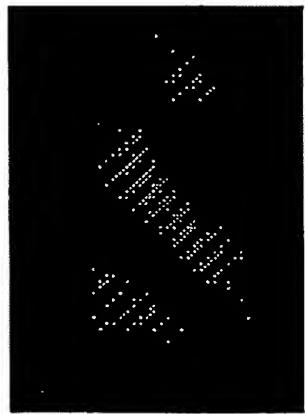
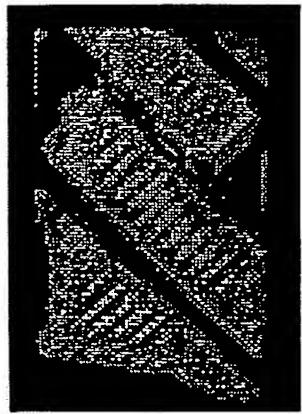


FIG. 6A



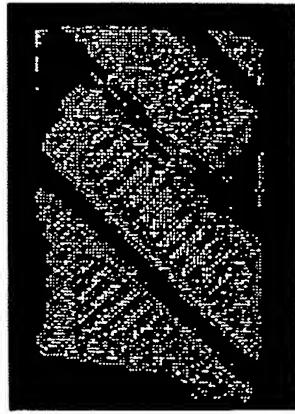
APPLIED
VOLTAGE : 3V

FIG. 6B



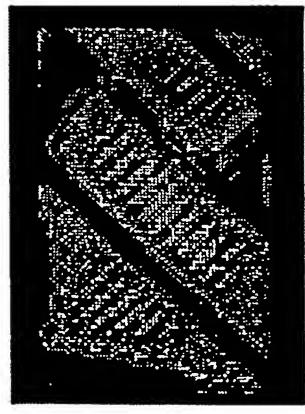
APPLIED
VOLTAGE : 4V

FIG. 6C



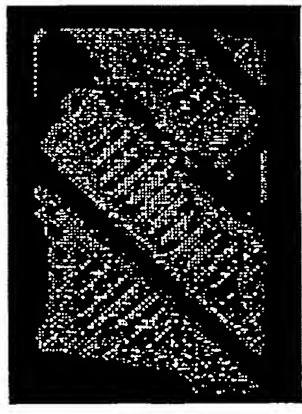
APPLIED
VOLTAGE : 5V

FIG. 6D



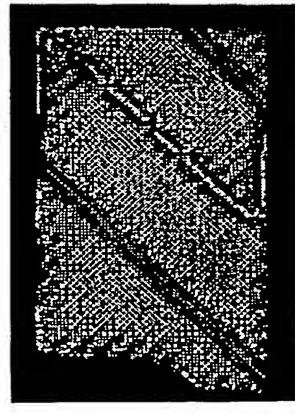
APPLIED
VOLTAGE : 6V

FIG. 6E



APPLIED
VOLTAGE : 7V

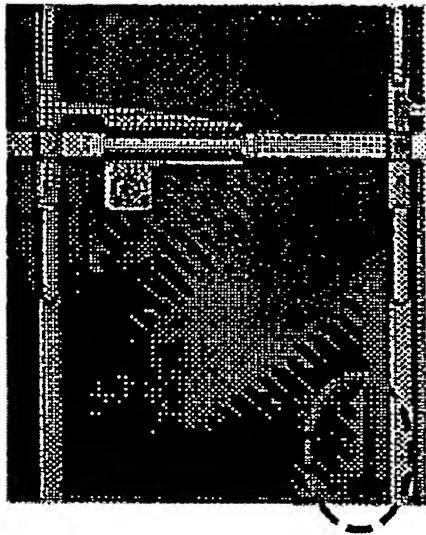
FIG. 6F



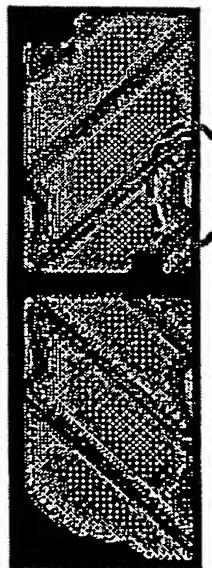
APPLIED
VOLTAGE : 8V

FIG. 7

FINE SLIT(SHALLOW CUT)

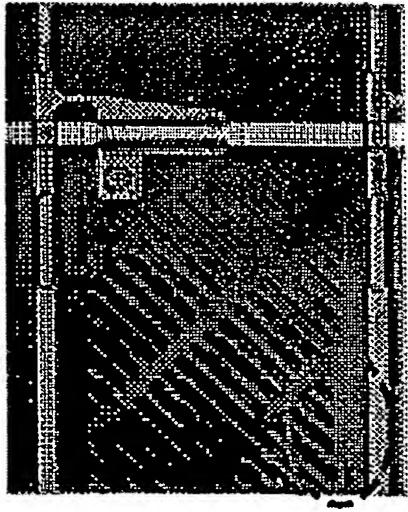


PIXEL ELECTRODE
PATTERN



ORIENTATION STATE

FINE SLIT(DEEP CUT)



PIXEL ELECTRODE
PATTERN



ORIENTATION STATE

PRINTED - STEREOLITHOGRAPH

FIG. 8

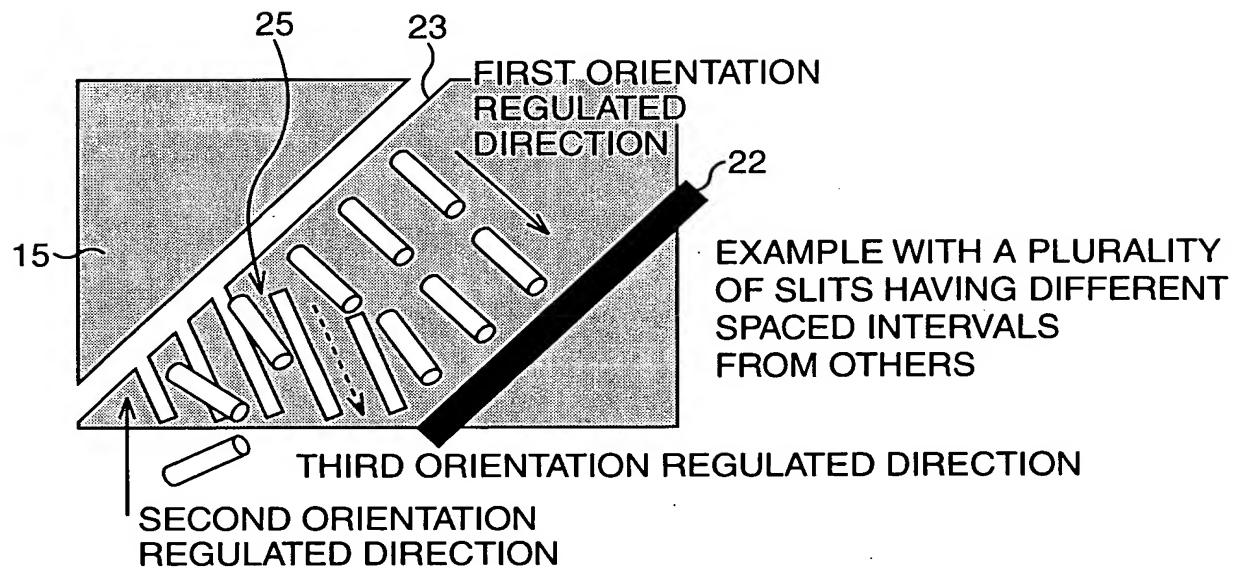


FIG. 9

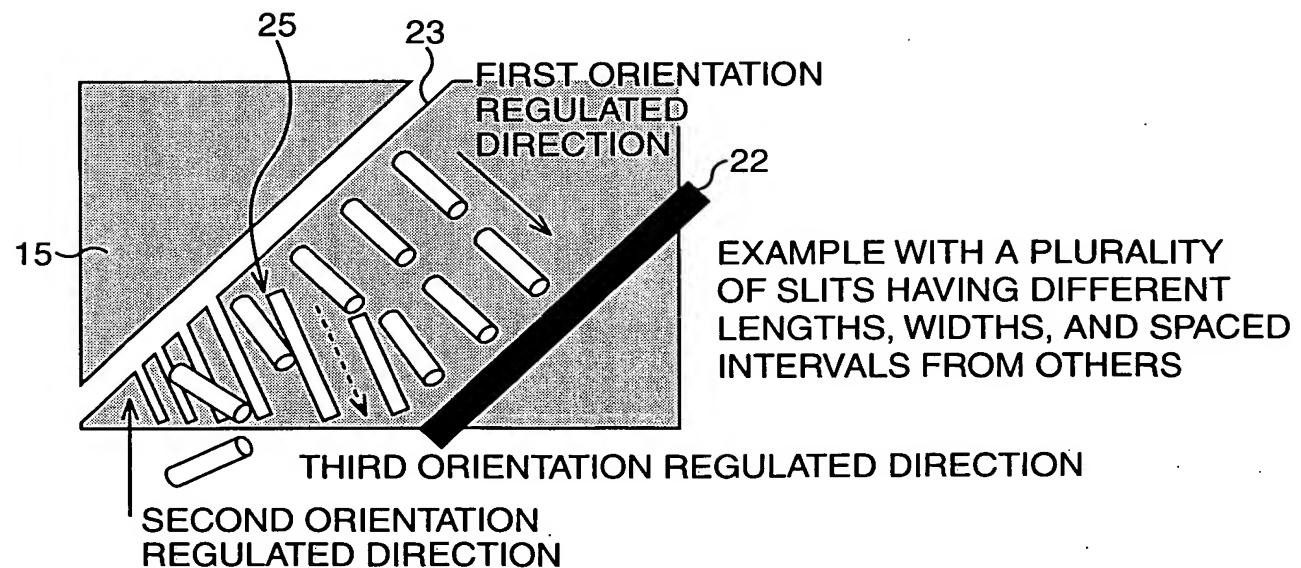


FIG. 10

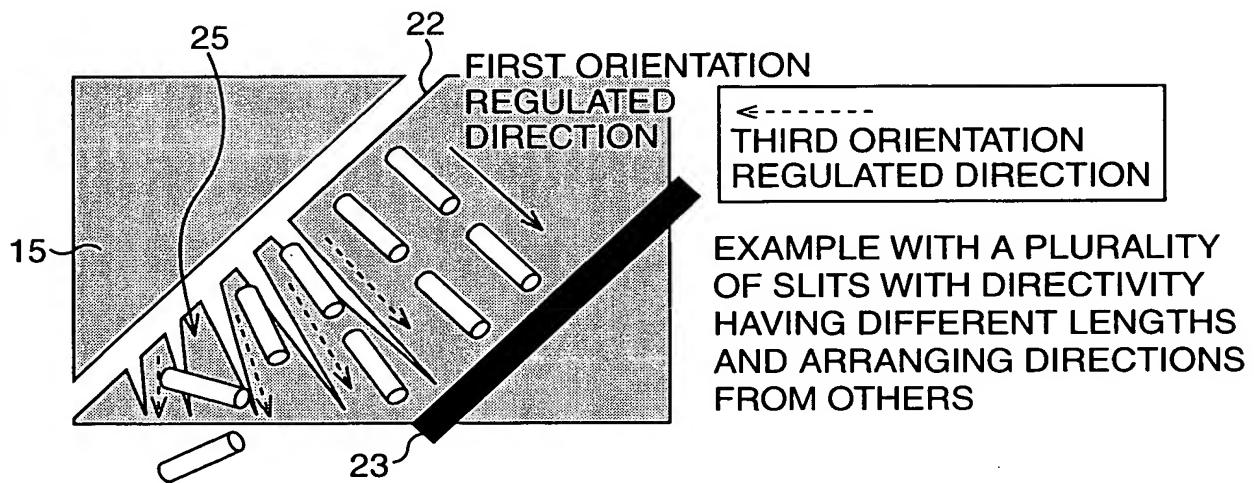


FIG. 11

EDITED SECTION

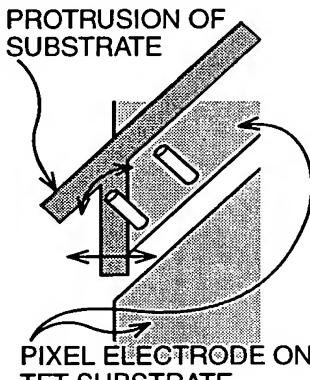
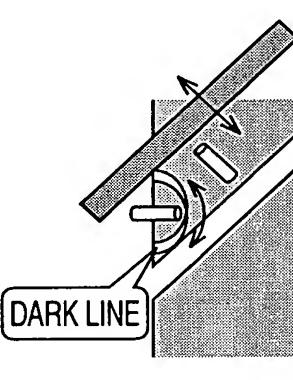
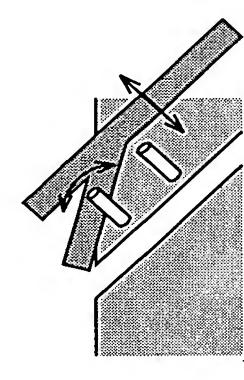
	①WITH AN AUXILIARY BANK	②WITHOUT AN AUXILIARY BANK	③CHANGE THE DIRECTION OF AN AUXILIARY BANK
STRUCTURE	 <p>PROTRUSION OF SUBSTRATE PIXEL ELECTRODE ON TFT SUBSTRATE</p>	 <p>DARK LINE</p>	
TRANSMITTANCE	1	0.9	0.95
MISALIGNMENT MARGIN	×	○	△
FEATURES	<ul style="list-style-type: none"> LIQUID CRYSTAL ORIENTATION OF A PIXEL EDGE CHANGES GREATLY DUE TO DEVIATION AMONG EACH SHOT AND IN PASTING (A LARGE DEGREE OF TRANSMITTANCE CHANGE) NO DARK LINE ON A PIXEL EDGE (A LARGE DEGREE OF IMPROVEMENT IN TRANSMITTANCE) 	<ul style="list-style-type: none"> LIQUID CRYSTAL ORIENTATION OF A PIXEL EDGE CHANGES DUE TO DEVIATION AMONG EACH SHOT AND IN PASTING (TO A SMALL DEGREE) OCCURRENCE OF ONE DARK LINE ON A PIXEL EDGE (A LARGE DEGREE OF DECREASE IN TRANSMITTANCE) 	<ul style="list-style-type: none"> LIQUID CRYSTAL ORIENTATION OF A PIXEL EDGE CHANGES DUE TO DEVIATION AMONG EACH SHOT AND IN PASTING NO DARK LINE ON A PIXEL EDGE

FIG. 12

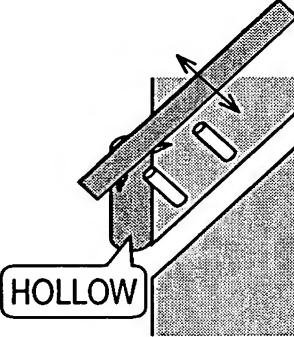
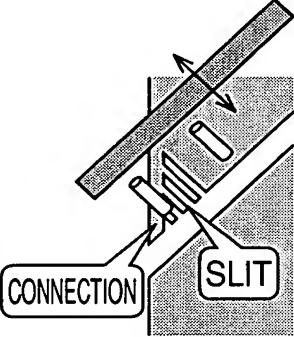
	④HOLLOW IN A PIXEL EDGE	⑤FINE SLITS + CONNECTION AT THE END
STRUCTURE		
TRANSMITTANCE	0.92	0.95
MISALIGNMENT MARGIN	○	◎
FEATURES	<ul style="list-style-type: none"> • LIQUID CRYSTAL ORIENTATION OF A PIXEL EDGE CHANGES DUE TO DEVIATION AMONG EACH SHOT AND IN PASTING (WITH A MARGIN) • NO DARK LINE ON A PIXEL EDGE 	<ul style="list-style-type: none"> • LIQUID CRYSTAL ORIENTATION DOES NOT CHANGE EASILY DUE TO DEVIATION AMONG EACH SHOT AND IN PASTING (WITH THE LARGEST MARGIN) • NO DARK LINE AT A PIXEL EDGE (TRANSMITTANCE UNDER IMPROVEMENT) • TRANSMITTANCE IS IMPROVED GREATLY AT A DRIVING VOLTAGE OF 6V OR HIGHER (EQUAL TO ①)

FIG. 13

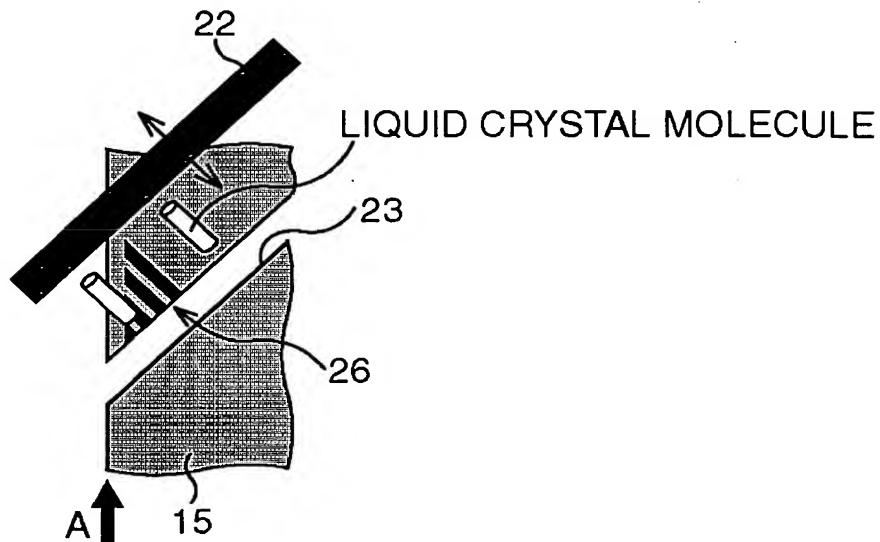


FIG. 14A

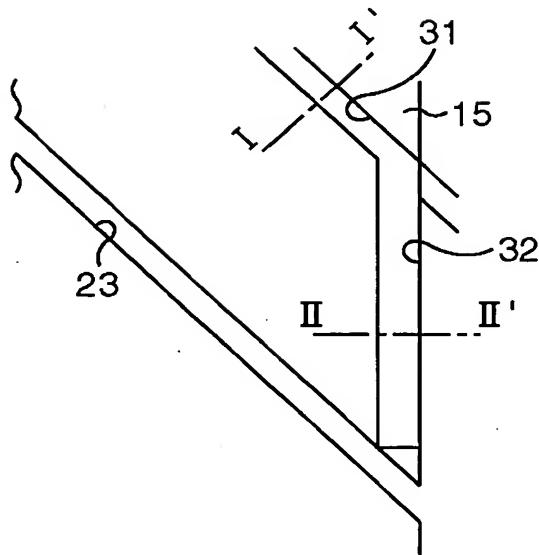


FIG. 14B

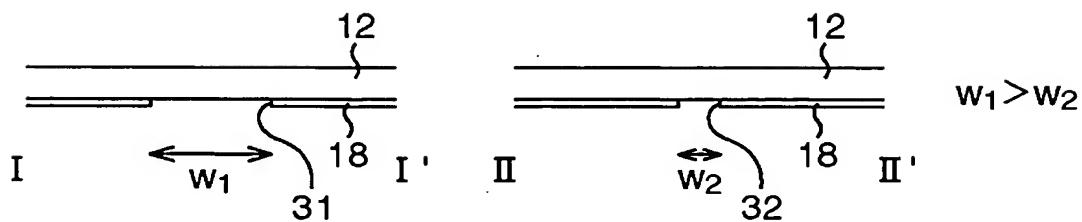


FIG. 15A

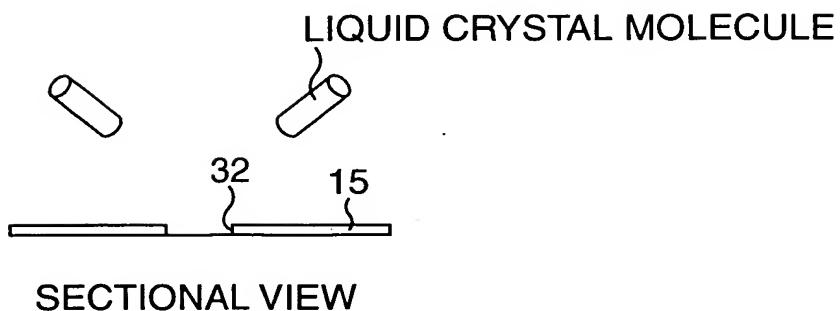


FIG. 15B

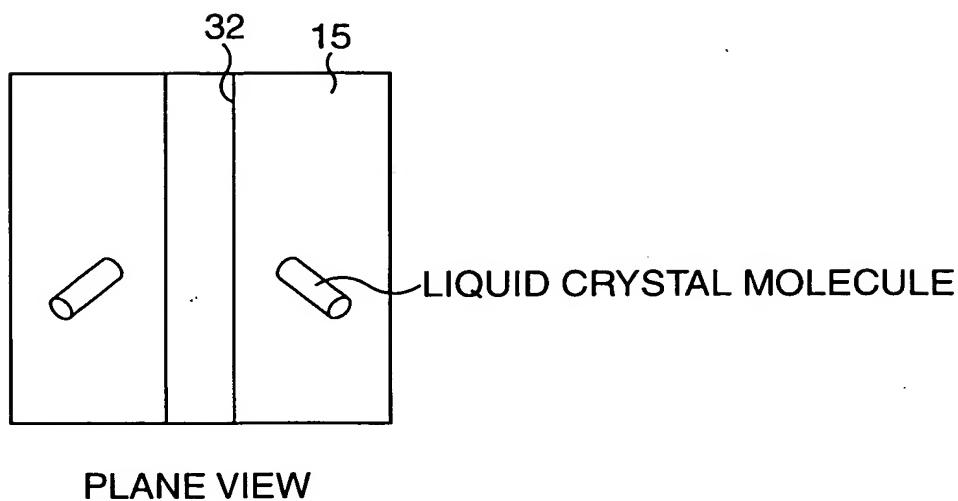
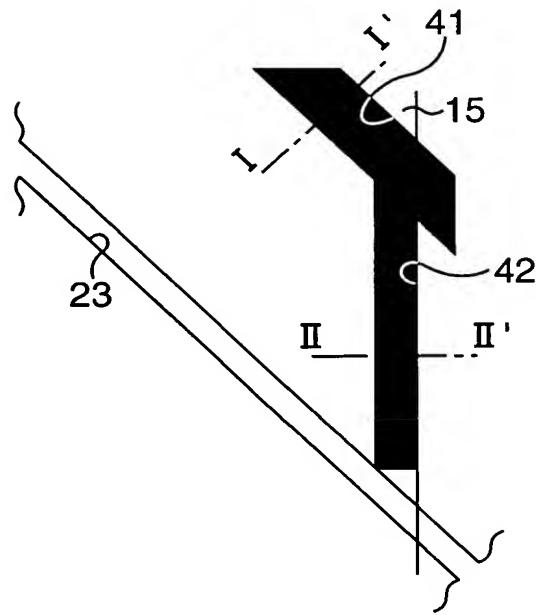


FIG. 16A



SEARCHED = 2002 Z. INVENTOR

FIG. 16B

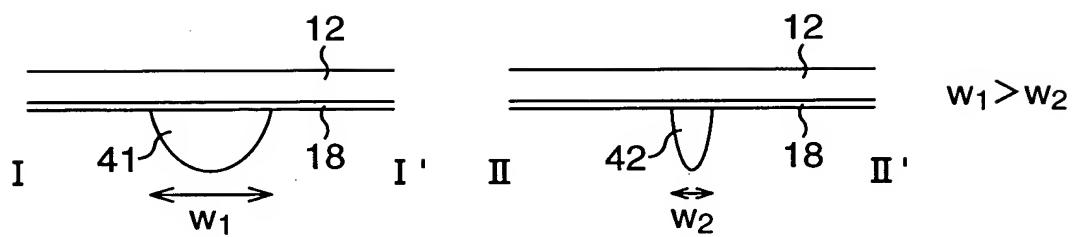


FIG. 17A

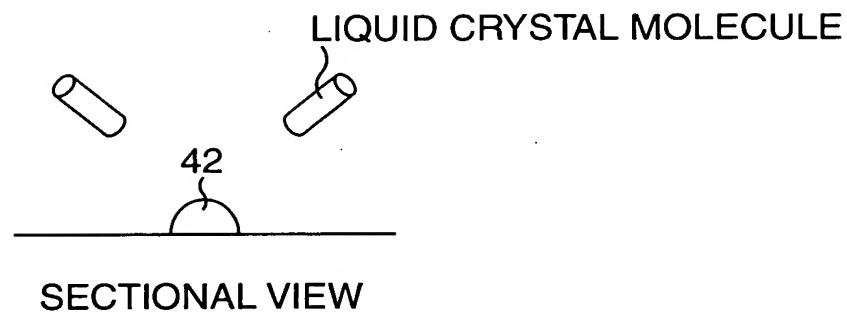


FIG. 17B

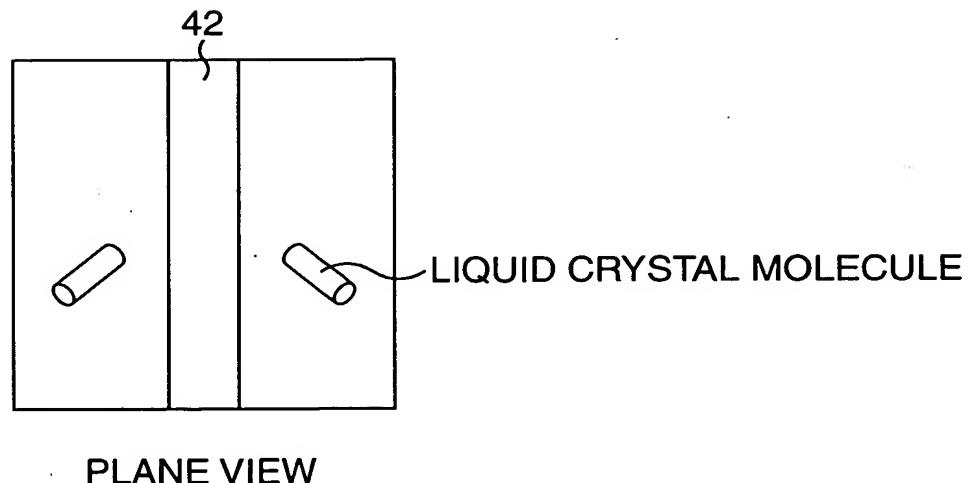
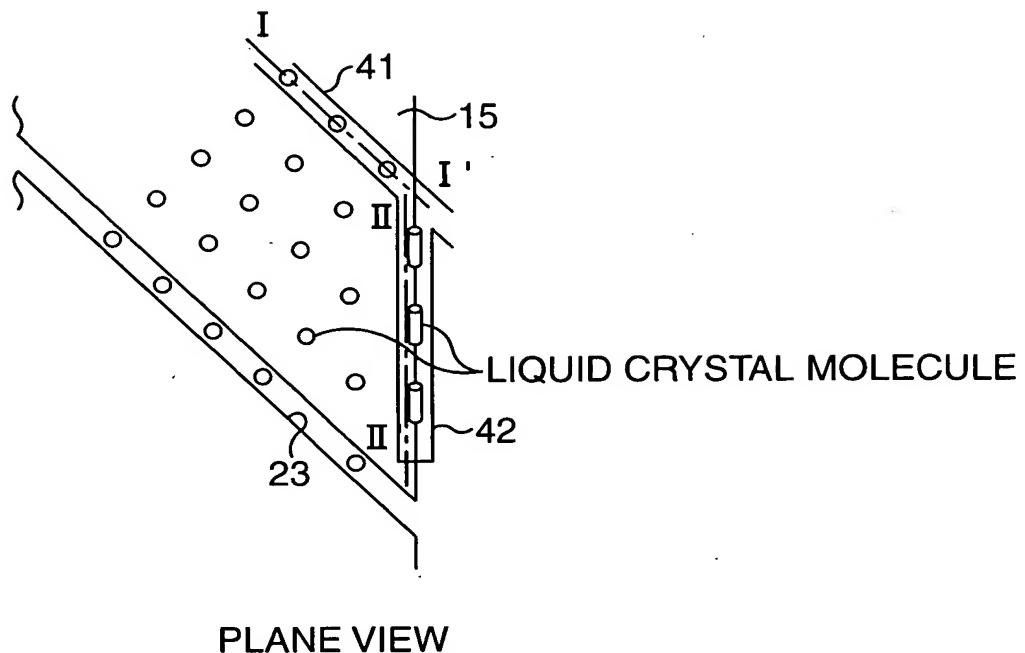
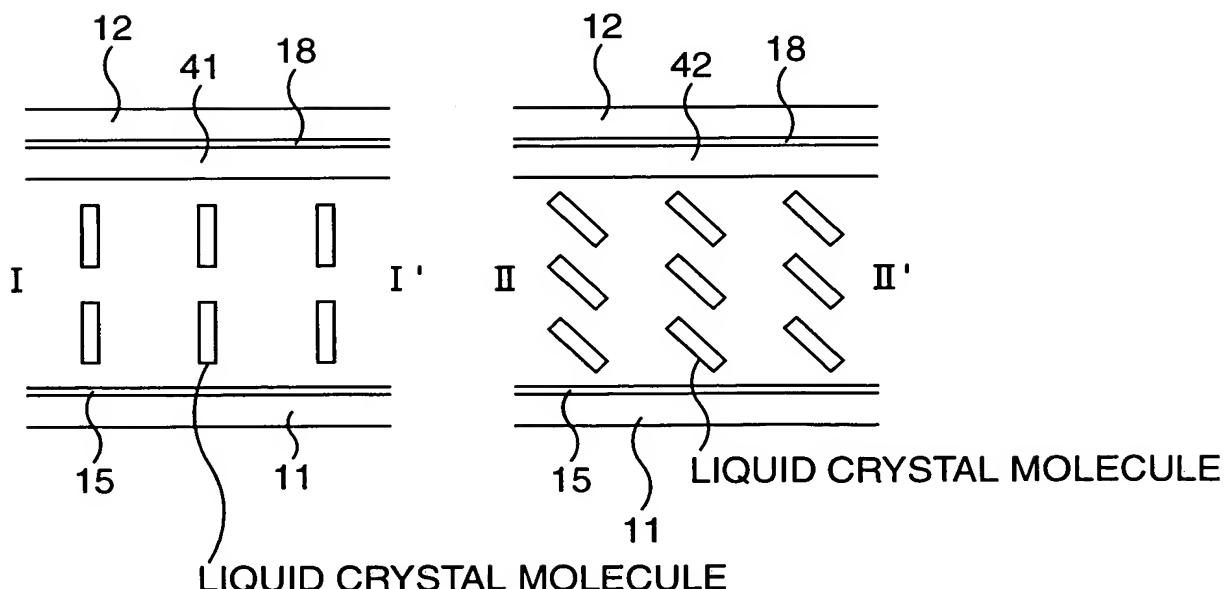


FIG. 18A



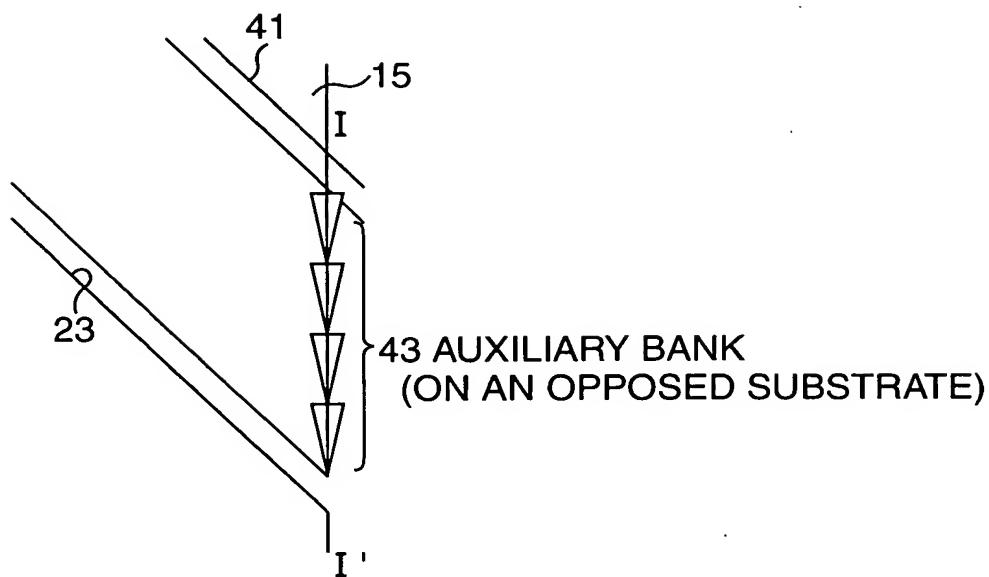
PLANE VIEW

FIG. 18B



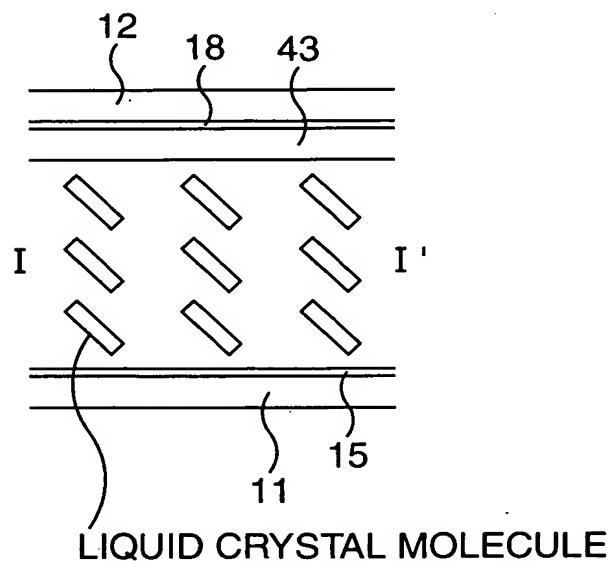
SECTIONAL VIEW

FIG. 19A



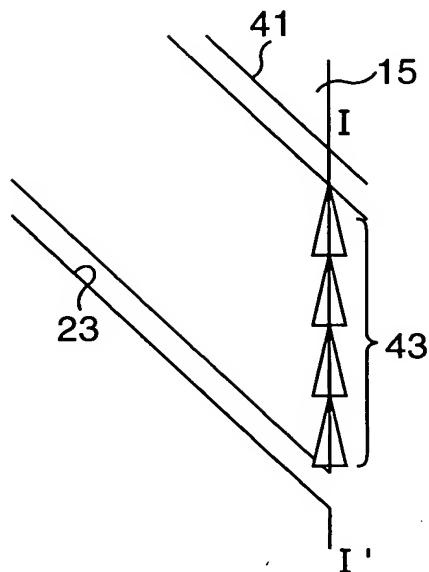
PLANE VIEW

FIG. 19B



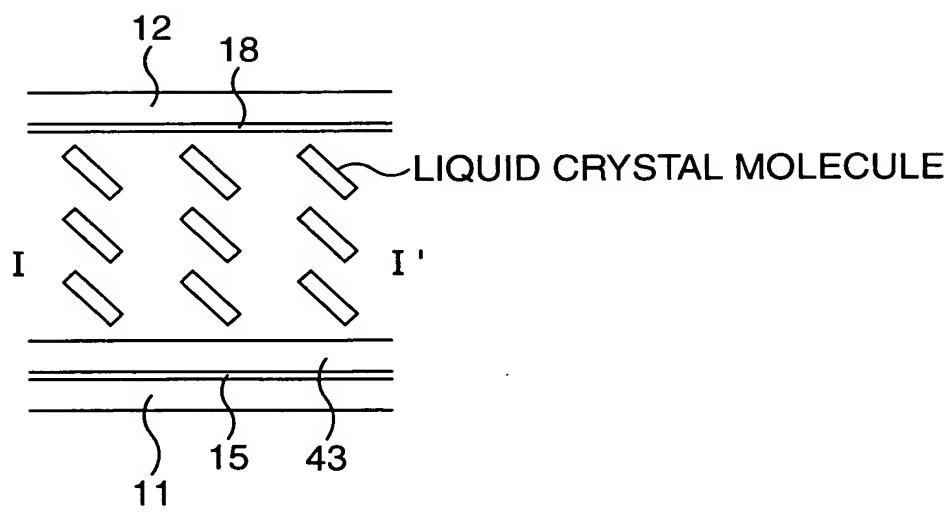
SECTIONAL VIEW

FIG. 20A



PLANE VIEW

FIG. 20B



SECTIONAL VIEW

FIG. 21A

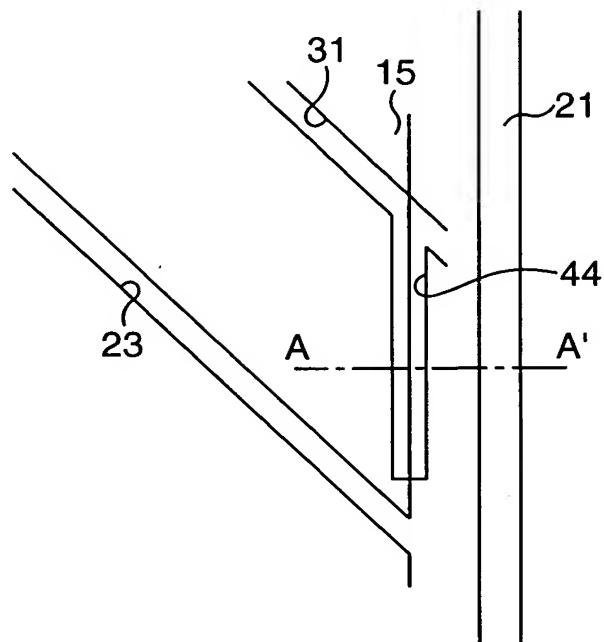


FIG. 21B

A REGION WITH NO ELECTRODE
ON BOTH OF THE SUBSTRATES

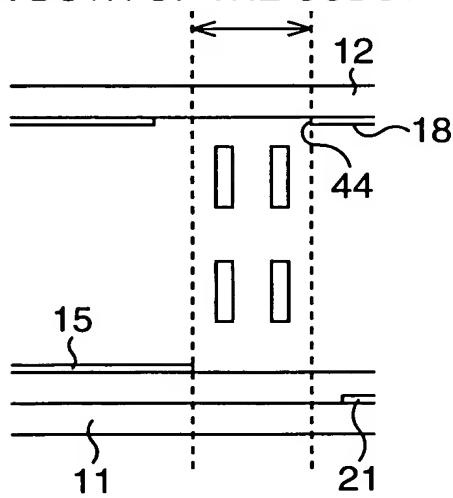
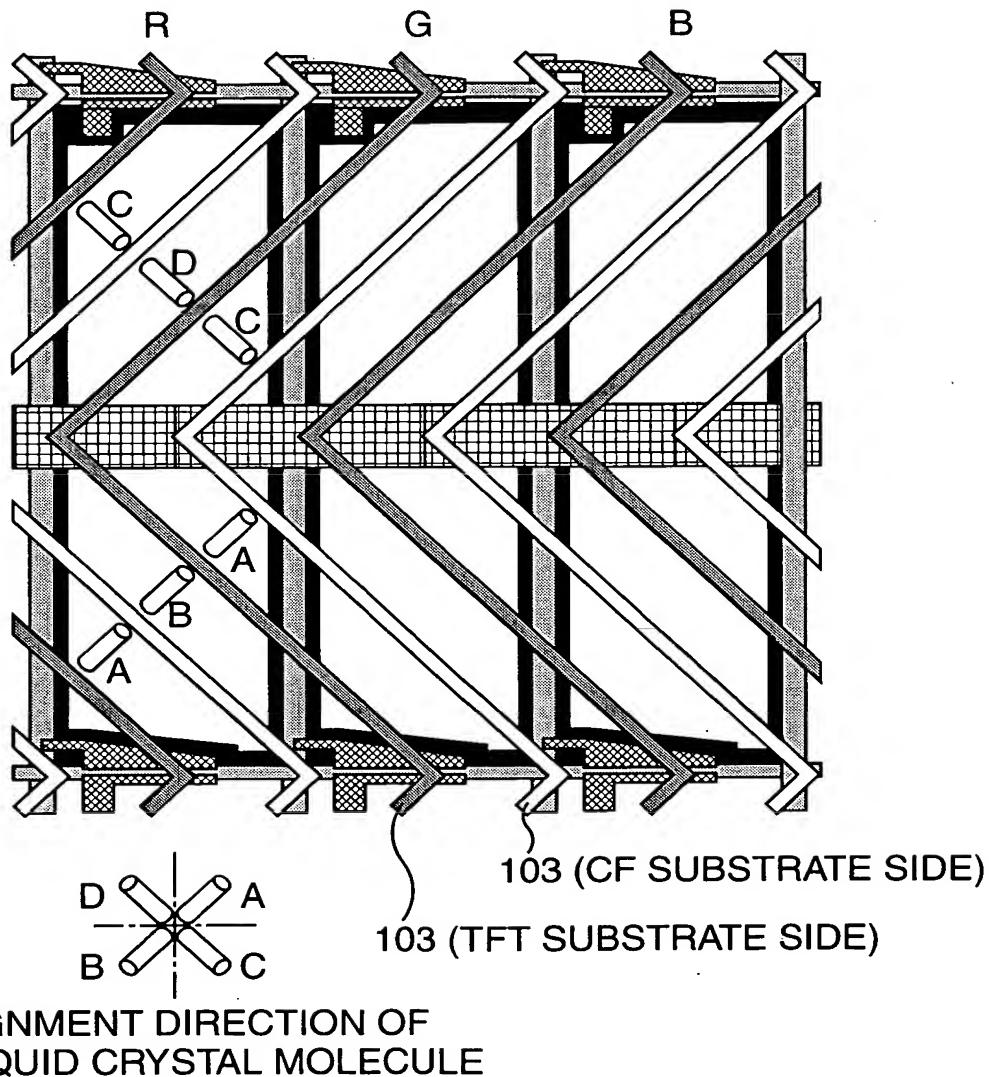
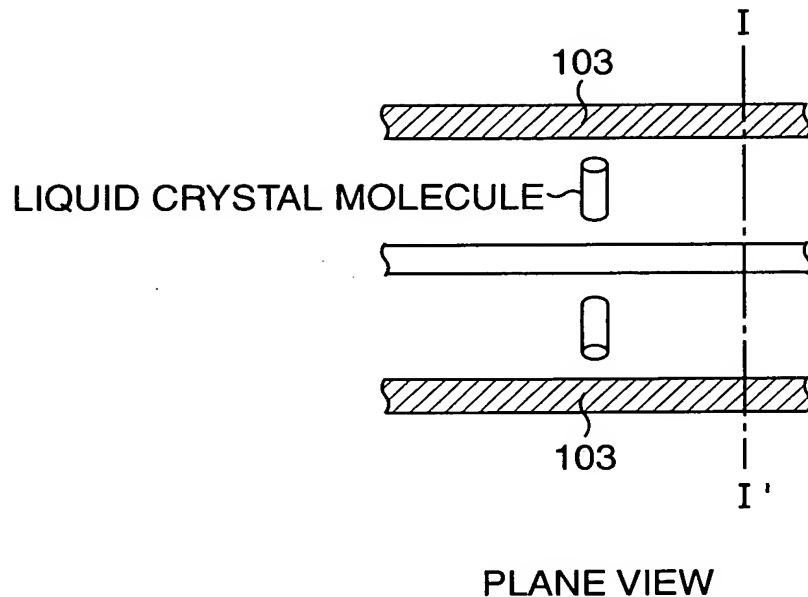


FIG. 22



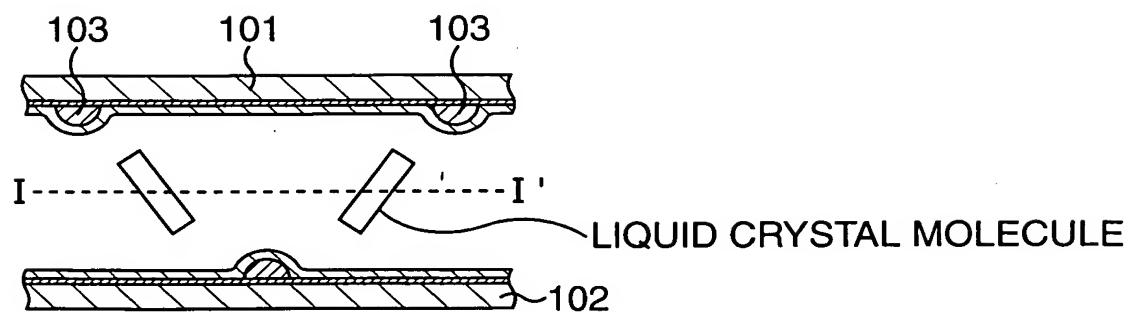
PIXEL STRUCTURE OF AN MVA LIQUID CRYSTAL DISPLAY (ONE PIXEL)

FIG. 23A



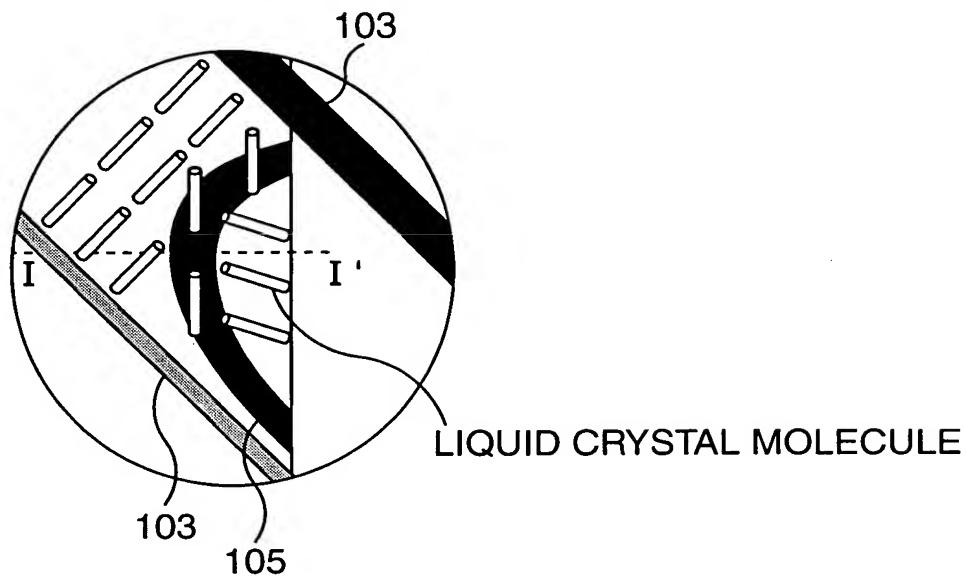
PLANE VIEW

FIG. 23B



SECTIONAL VIEW

FIG. 24A



CONTINUATION - SPECIFICATION

FIG. 24B

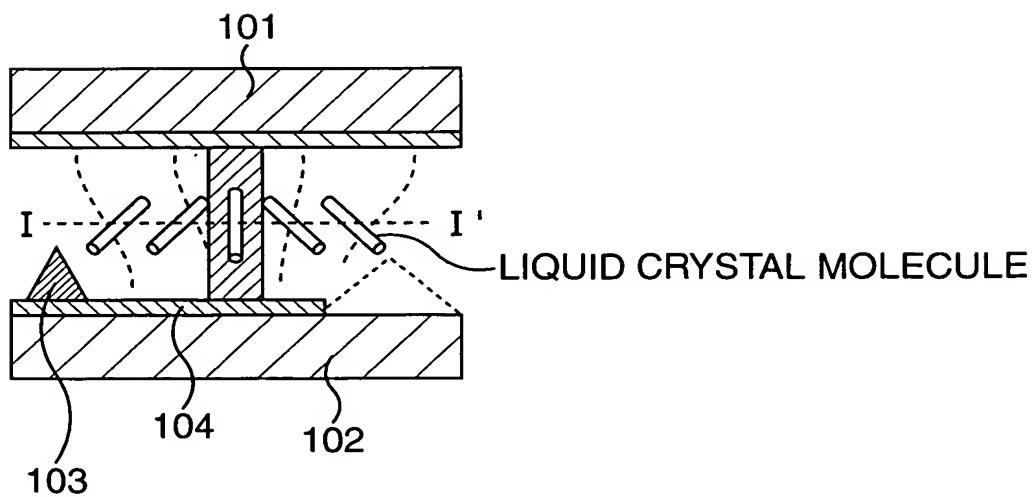
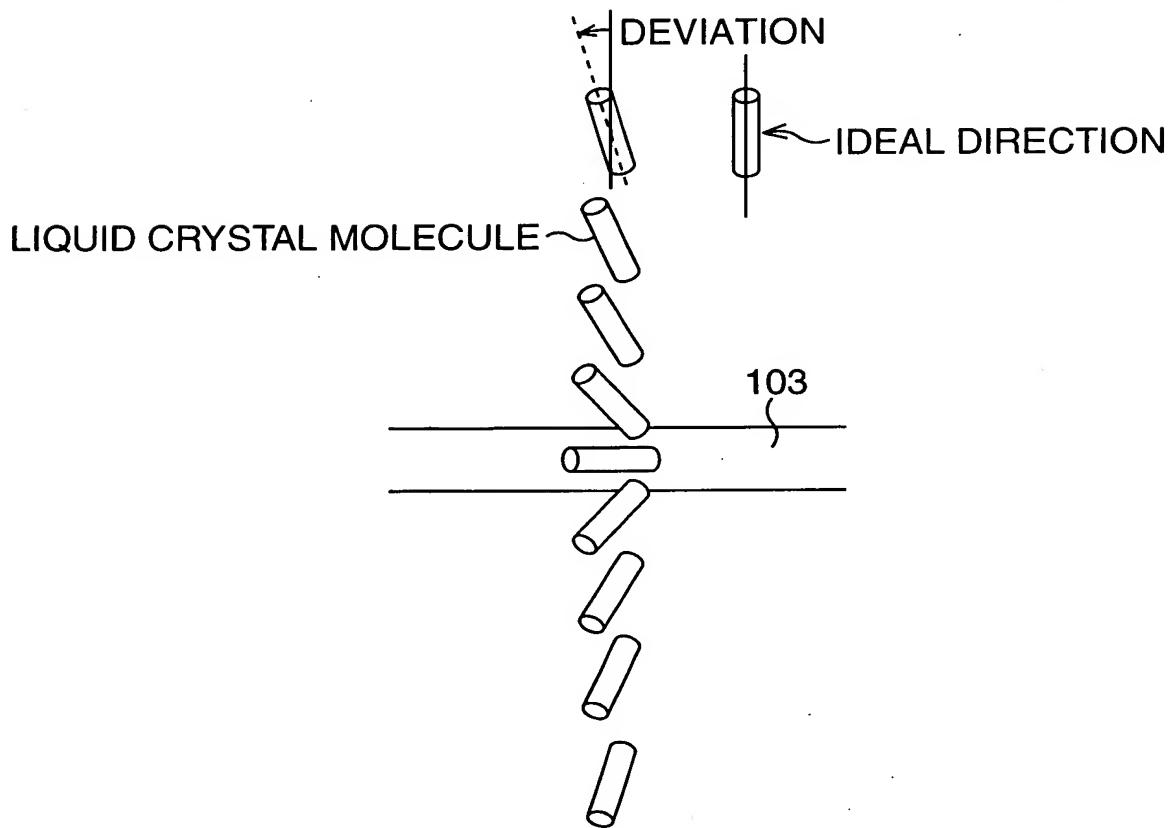
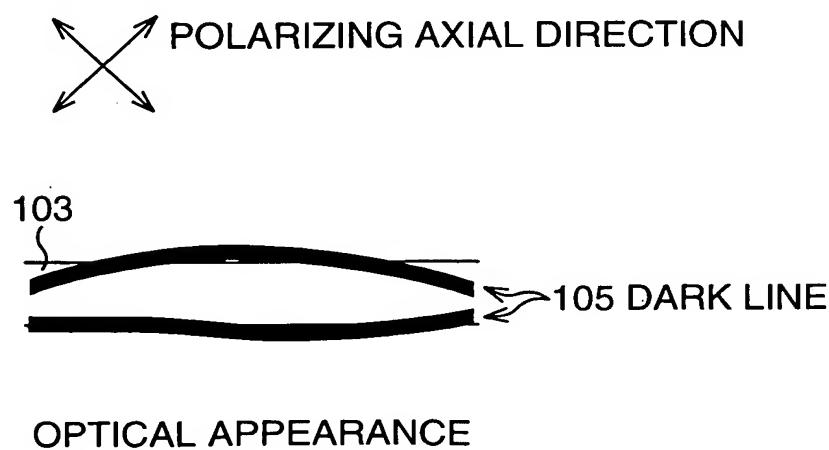


FIG. 25A



ALIGNMENT DIRECTION OF THE LIQUID CRYSTAL MOLECULE

FIG. 25B



OPTICAL APPEARANCE

FIG. 26A

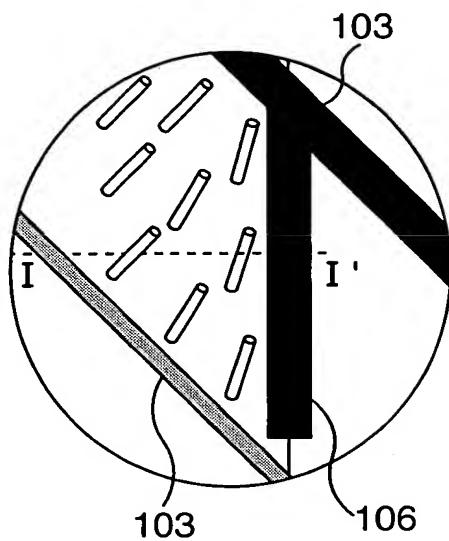


FIG. 26B

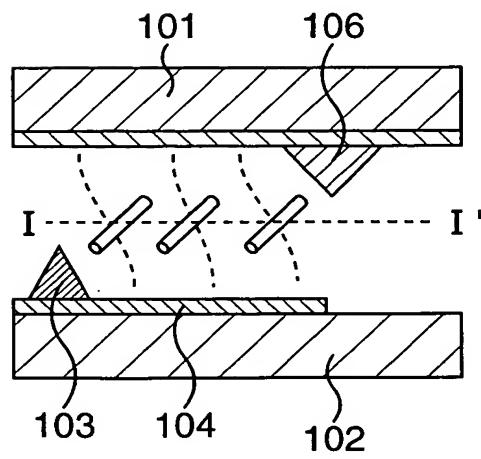


FIG. 27A

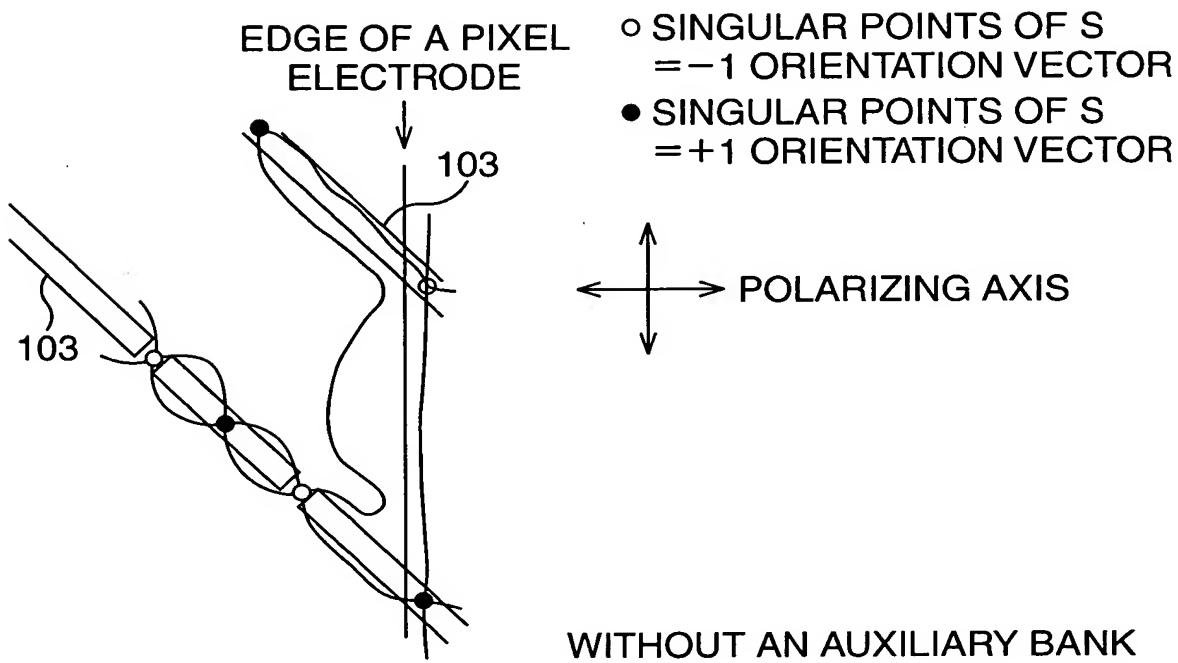


FIG. 27B

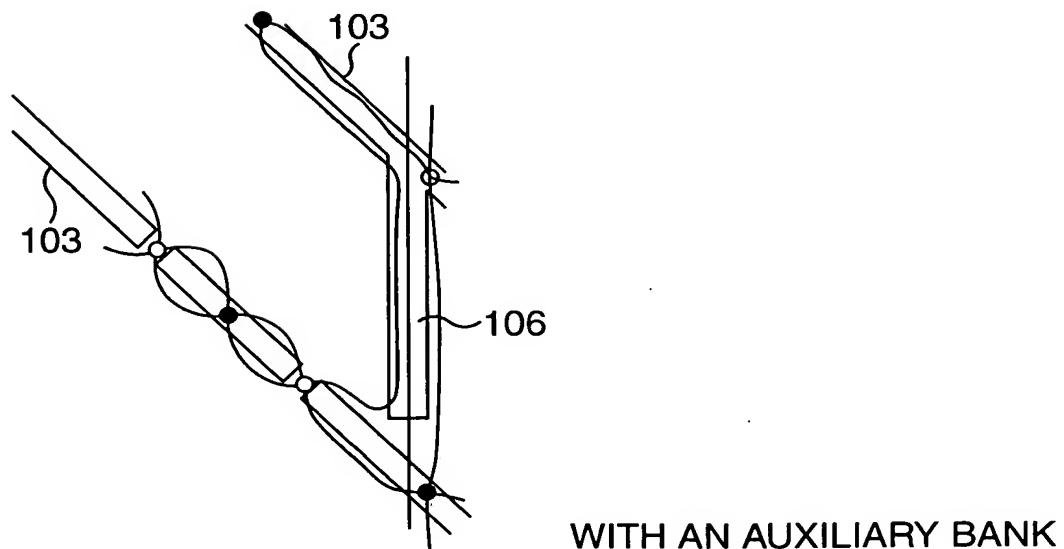


FIG. 28

STRENGTH OF
SINGULAR POINTS OF
ORIENTATION VECTOR
● $S=+1$
○ $S=-1$

OBSERVED WITH A TFT
SUBSTRATE ON
A LOWER SIDE AND
A CF SUBSTRATE ON
AN UPPER SIDE

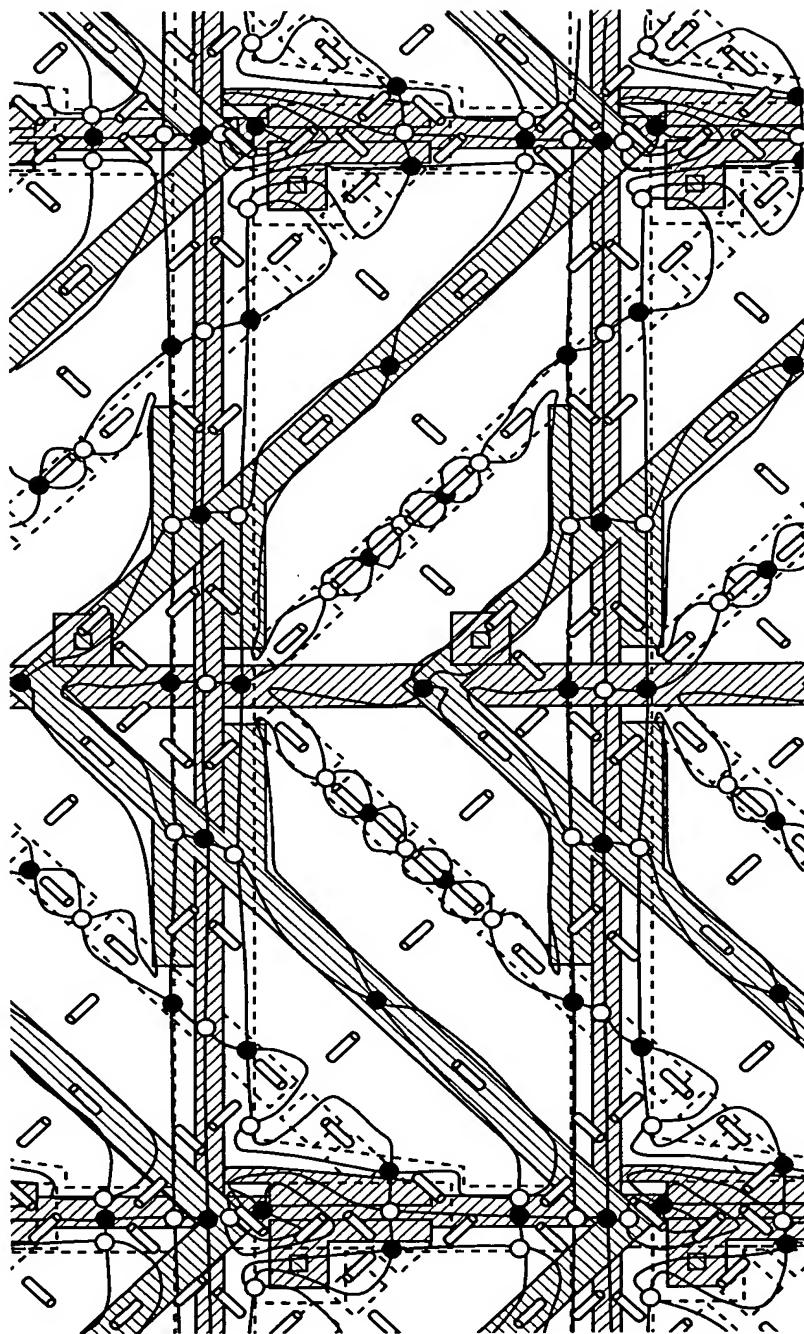


FIG. 29A

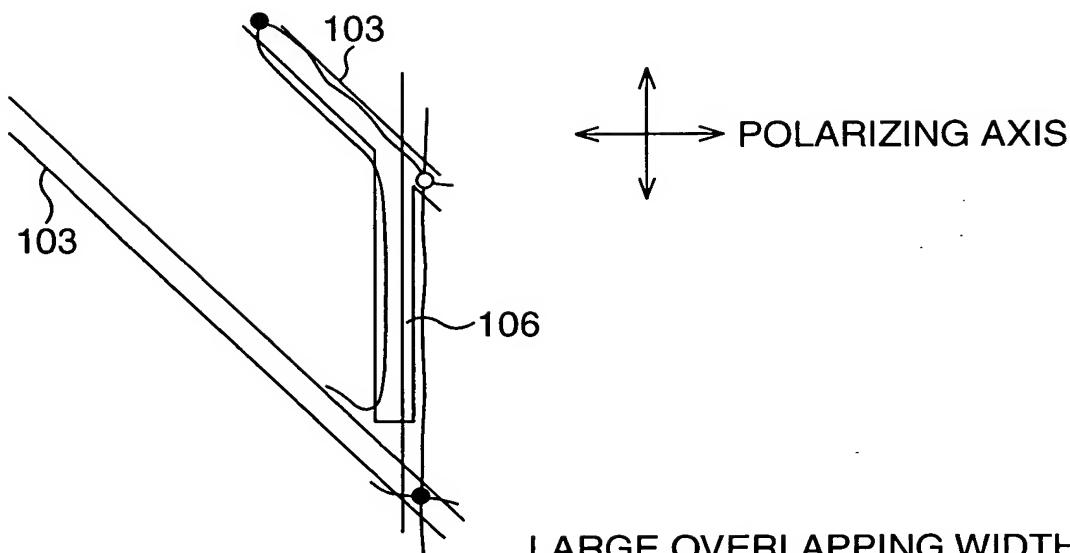


FIG. 29B

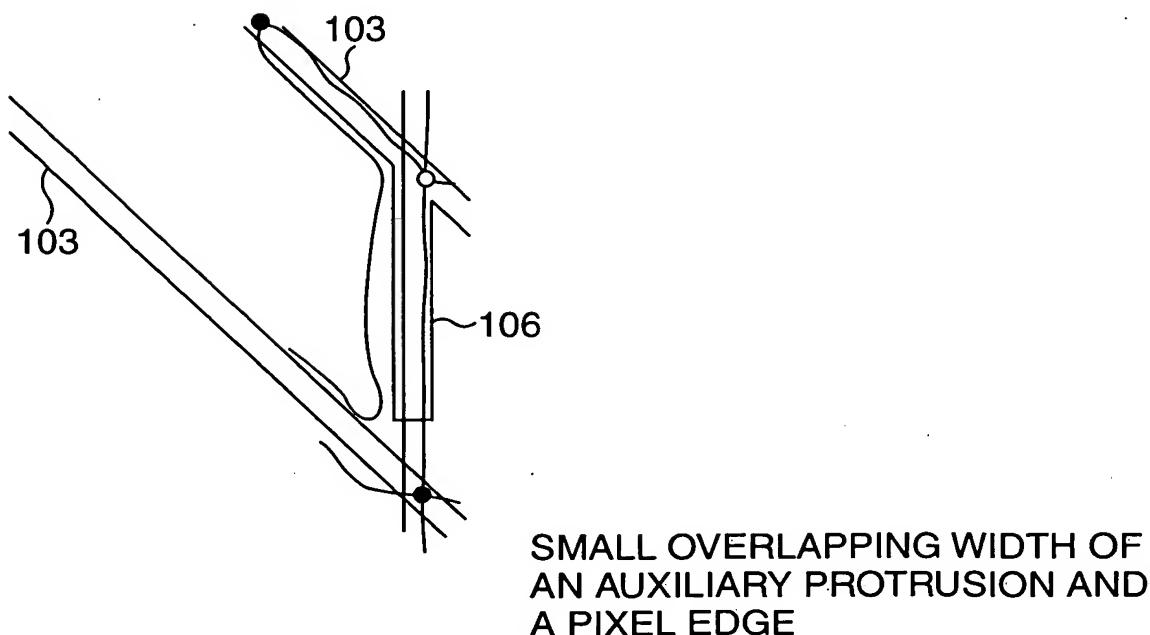


FIG. 30

